

Jack Kohler

MONTANA *Wildlife*

VOL. V No. 2

Montana Fish and Game Department Official Publication

Summer - 1955



Kraig

DEDICATION . . .

This issue of **Montana Wildlife** is dedicated to William Russell Bergeson, Harold Arthur Gartside and Carl Allen Swartz, who devoted their lives to the State and the Montana Fish and Game Department.

William Bergeson passed away shortly before he was to assume the new position of District Game Biologist for District Five in Billings. He had been with the Department as upland game bird biologist for 14 years.

Harold Gartside, state fish and game warden for 10 years, was stationed at Sidney. He was drowned when his boat capsized in the Missouri River.

Carl Swartz had worked for the Fisheries Division for 10 years, and was a fish culturist at the Arlee hatchery at the time of his death.

The Montana Fish and Game Department deeply regrets the tragic loss of these men, and extends sincere sympathy to their families.

MONTANA FISH AND GAME DEPARTMENT

Official

Publication



State of Montana

J. Hugo Aronson, Governor

MONTANA FISH AND GAME COMMISSION

Manson Bailey, Jr., Glasgow, Chairman

Ralph D. Shipley, Miles City

William T. Sweet, Butte

H. W. Black, Polson

E. J. Skibby, Lewistown

A. A. O'Claire, Helena, Secretary

DIVISION DIRECTORS

Walter J. Everin.....	Deputy Director
Walter M. Allen.....	Fisheries Superintendent
Robert F. Cooney.....	Wildlife Restoration
M. J. Watt.....	Chief Law Enforcement Officer
W. Kenneth Thompson.....	Information and Education
Ovie N. Woolverton.....	Chief Clerk



MCKEE PRINT.



Our Cover - from an original drawing by Vern Craig

The sage grouse, commonly-known as a sage hen, is native to the semi-arid sagebrush-covered areas of the western United States.

During pioneer days, this prairie grouse was considered the leading upland game bird in the west, and was reputed to be so abundant that the skies were darkened by huge flocks. Today, the species is scarce over most of the nation and a major part of its former range has been developed for agriculture.

In Montana, sage grouse are found in greatest numbers in the southeastern and central counties, and are also found in lesser numbers in a few sage brush valleys of the western part of the state.

Sage grouse use sage brush leaves, berries and insects as their main foods, and many insects are eaten by young birds. Sage grouse differ from most birds in that since their diet consists of soft foods, they have a poorly-developed gizzard and require no grit.



Montana Wildlife

Vol. V

Mary Moore, Editor

No. 2

Vernon Craig, Artist

TABLE OF CONTENTS

Dedication.....	Inside Front Cover
Our Cover.....	1
New Fish and Game Legislation.....	3
New Commissioner Appointed.....	5
Conservation Education for Adults.....	6
Montana Sportsmen's Projects.....	8
School for Wardens.....	10
Missouri Spoonbill.....	12
Wings for Grouse Management.....	14
Young Outdoor American — 1955.....	17
Take a Kid Fishing.....	19
A Marshland in the Making.....	20
1955 Trout Bag Limits.....	23
What's the Difference?	Inside Back Cover

Summer Issue — 1955

"Montana Wildlife," published quarterly, may be obtained free of charge by writing the Montana Fish and Game Department at Helena. Contents of this magazine may be reproduced in whole or in part if properly credited.

Photo Credits

Front Cover, Pages 1, 16, 23 and inside back cover by Vern Craig; Page 5 by Hector LaCasse; Pages 8, 9, 10 and 11 by Ken Thompson; Pages 12 and 13 by Charles E. Johnson, Fort Peck; Page 15 by Robert Eng; Pages 17 and 18 by Basil Ashcraft; Page 20 courtesy of the **Fairfield Times**; Pages 21 (upper) by Harold Picton; (lower) by Gerald Salinas; and Page 22 by Allan Lovaas.

New Fish and Game Legislation

Listed below are resumes of bills pertaining to fish and game matters as passed by the Montana Legislature during the 1955 session. These House and Senate bills went into effect July 1, 1955.

House Bills Passed

H.B. 47—Changes the designation of the State Fish and Game Warden to that of State Fish and Game Director. Also changes the designation of all Deputy State Fish and Game Wardens to that of State Fish and Game Wardens.

H.B. 50—Prohibits any employee of the Fish and Game Commission from taking any active part in political campaigns, or from using his official authority or influence politically.

H.B. 183—Provides for \$20.00 special licenses for non-residents to hunt deer and also a \$20.00 special license to hunt antelope in special areas designated by the Commission.

H.B. 278—Authorizes persons to kill or trap beaver doing damage to property such as irrigation ditches. Permits to do so must be secured from the Fish and Game Director, except that no permit is required during the months of June, July and August. In addition, this Section also requires that all traps be identified with the owner's name and address on a securely-attached tag.

H.B. 348—Provides for the selection and appointment of the Deputy Director and for the Game Wardens. State Game Wardens are required to have passed a qualifying examination.

H.B. 349—Provides the Commission with the power to employ a State Fish and Game Director, who shall also be the Secretary of the Commission. The Director is given the authority by and with the consent of the Commission to establish such Department Divisions and to employ the necessary personnel needed to conduct the work of the Department.

Senate Bills Passed

S.B. 41—Vests in the Commission the authority to fix seasons, and bag limits; to open and close, shorten or lengthen seasons on any species of game bird, fish or fur-bearing animals; to establish areas open for bow and arrow hunting of deer, and to designate when only bow and arrows may be used for deer hunting; to authorize and declare what areas may be opened for the hunting of deer with shotguns only. It provides for the issuance of special licenses where game animals are causing damage to private property. Allows the issuing of permits under a drawing system when there are more applications than permits to be issued.

Senate Substitute for S.B. 44—Makes it unlawful for persons to operate boats upon streams, lakes and other waters of the State without adequate life preservers or life jackets. Life jackets are defined as articles to be worn upon the person; a life preserver is defined as an article not necessarily worn upon the person. Both are defined as being capable of such buoyancy as to keep a person afloat.

S.B. 95—Prohibits taking of game from any self-propelled or drawn vehicle. Prohibits the use of set gun, jack-light or other artificial light, trap, snare, or salt lick. Allows the use of rifles to shoot upland game birds only upon permission of the Commission. Regulates

the use of the airplane and specifically prohibits the spotting of game and communicating the location thereof by any signals to persons on the ground. Prohibits the use of silencers or mufflers on any firearm. Permits the Commission to designate shotgun loads for the shooting of deer. Regulates the use of dogs. Also defines the methods to be used for the taking of game fish and the snagging of sockeye salmon.

S.B. 102—Regulates the buying, selling, possession and transportation of fish, game birds, game animals, fur-bearing animals, or parts thereof which are protected by the laws of this State.

S.B. 121—Consolidates the laws by placing into one section laws for the taking of fish, birds, and game animals, the waste thereof and prohibits the taking of any of the protected game animals, birds or fish during closed seasons.

S.B. 122—Prohibits the alteration, changing or transfer of any hunting or fishing license and fixes the penalty thereof.

S.B. 123—Provides for the adoption of Federal migratory game bird regulations by the Commission and provides for penalty for violations of the Act.

S.B. 124—Provides for the removal of employees for cause, hearing before Commission under certain conditions and provides for merit ratings of the employees. This section formerly referred to qualifications of deputy fish and game wardens and has been rewritten to include only matters pertaining to all employees of the Commission, their removal, rating, salary and expenses.

S.B. 125—Prohibits the possession of any carbide, lime, giant powder, dynamite, or other explosive compounds or narcotic poison or deleterious substances within 100 feet of a stream or fish pond for the purpose of taking fish. Provides penalty for violation.

S. B. 146—Provides requirements for Outfitters License, qualifications of outfitter, 30-day application before issuance of licenses and prohibits misrepresentation of services or facilities and penalty for violation.

Senate Substitute for S.B. 153—Provides for appointment of all sheriffs, their deputies, constables, all peace officers of the State, all forest officers, such other officers of the U. S. Forest Service, or agents of the U. S. Fish and Wildlife Service on duty in the State as ex-officio State Fish and Game Wardens.

Senate Substitute for S.B. 154—Requires all residents to obtain the proper shipping permit before making shipment or transportation by personal vehicle or other means any of the game animals, game birds or game fish or fur-bearing animals out of the State of Montana.

S.B. 182—Makes it a misdemeanor for any person to act in a careless or reckless manner, or to act with wanton disregard of human life or property, or knowingly fail to give assistance to any person whom he may have injured or wounded.

S.B. 185—Consolidates into one section the penalty for violation of any of the orders, rules, or regulations made by the Fish and Game Commission, and of any of the fish and game statutes.

S.B. 186—Repeals those statutes which are in conflict and duplicate those statutes enacted by the 1955 Legislature.

S.B. 202—Provides for the licenses required to hunt and fish. Eliminates the \$5.00 antelope fee, increases the resident big game license to \$3.00. Adds to the nonresident \$100.00 big game license the privilege to hunt birds as well as antelope without special licenses.

New Commissioner Appointed

Edward J. Skibby, Lewistown, is now serving as Fish and Game Commissioner from District Four. Mr. Skibby was appointed to a four-year term by Governor J. Hugo Aronson, to fill the vacancy left by Walter M. Banka, Conrad, former Commissioner, whose term expired April 15 1955.

Mr. and Mrs. Skibby operate a 25,000 acre cattle ranch near Winnitus, and he will represent the interests of sportsmen, farmers and stockmen in Central Montana. The Skibbys have no children.

Mr. Skibby served two terms as a Representative in the Montana State Legislature, and was a member of the House committee on oil and gas, livestock, public utilities, water conservation and water rights, judiciary, townships and counties, and workmen's compensation.

Born in Aurora, Iowa, in 1898, Mr. Skibby lived in Glyndon, Minnesota, until he moved to Montana in 1920. A veteran of World War I, Mr. Skibby served in the Navy as a boatswain's mate second class, and is a member of the American Legion, Elks, and three Masonic orders.

As Commissioner, Mr. Skibby will serve the entire state of Montana along with the other four Commissioners in setting Fish and Game Department policies. He will particularly represent the interests of Dis-



E. J. SKIBBY

trict Four, which includes Petroleum, Fergus, Judith Basin, Meagher, Cascade, Lewis & Clark, Teton, Pondera, Glacier, Toole and portions of Liberty and Chouteau counties.

Mr. Skibby is particularly interested in the range aspects of wildlife management and has expressed an interest in fostering policies which will assure that wildlife is managed within the limits of the available food supply.

Along with Manson Bailey, Jr., Glasgow; W. T. Sweet, Butte; H. W. Black, Polson, and R. D. Shipley, Miles City, Mr. Skibby will attend monthly meetings in Helena to consider and act upon Department business.

A New Program . . .

Conservation Education For Adults

Montana sportsmen, civic, agricultural and other interested groups can now take advantage of the state-wide adult conservation education program being offered by three state institutions.

Cooperators in this endeavor are the Montana Fish and Game Department, which has provided the funds for two wildlife extensionists, Montana State University and Montana State College, which will provide headquarters and guidance for each of the program leaders.

The presentation is a series of lectures and forum-type discussions on wildlife management and inter-related subjects, including soil, vegetation and farmer-sportsmen relations.

Objectives of this timely effort are to promote adult education services in the fields of land and wildlife management; to secure public acceptance of a scientific approach to wildlife management; to help orient public thinking on the whole subject of wildlife management; to develop the best possible working relations among agricultural, livestock and wildlife interests; and to secure better public understanding of the dual responsibilities between state and federal governments concerning land management and fish and game resources.

The broadened program is an extension of work initiated by Dr. J. W. Severy of Montana State University, Dr. C. J. D. Brown of Montana State College and the Montana Wildlife Federation. In its initial stages it was presented in several Montana cities where it was enthusiastically received.

An interesting outgrowth of the program is the continuity maintained in some communities even after the course is completed. The solid background and understanding of all the renewable natural resources provided through this course has created an impetus for further delving into better conservation practices.

The best example of the far-reaching values of the course is evidenced by the sustained interest of several Bitterroot (Ravalli County) sportsmen's groups which have taken part in the course. These groups have since organized their own panels and invite representatives of the Fish and Game Department, Forest Service, Soil Conservation Service, County Agents and others to participate in programs designed to iron out their local problems.

Arrangements for this program in any community may be made by writing the Montana Fish and Game Department in Helena, the Public Service Division of Montana State University in Missoula or the Extension Service at Montana State College in Bozeman.

Les Pengelly . . .



from his headquarters in Missoula, has initiated the lecture series at Darby, Polson, Libby, Big Fork and Kalispell.

He was formerly with the Idaho Fish and Game Department where he was area big game biologist for the northern portion of that state.

He received his A.B. from Northern Michigan College of Education in 1939 and his M.S. degree in wildlife conservation from the University of Michigan in 1948.

Eldon Smith . . .

began his duties in February as wildlife extensionist with headquarters at Montana State College in Bozeman. He resigned from the South Dakota Department of Game, Fish and Parks where he was project leader of the small game and fur bearer division to accept the Montana position.

He received both his B.S. and M.S. degrees in Wildlife Management from Utah State Agricultural College and has worked with the U. S. Soil Conservation Service, U. S. Forest Service and the Utah Fish and Game Department.



Montana Sportsmen's Projects:

(Eleventh in a Series)

Teen-age boys and girls will be our hunters of tomorrow. If they are taught safe gun handling practices today, their hunting days will be safe and enjoyable.



Tom Meredith, Helena, National Rifle Association instructor, explains the theory of gun powder, different types of shells and the general nomenclature of a rifle. This shooting safety course, sponsored by the Helena Wildlife Association, is designed to help teen agers become safe hunters. Meredith's latest class was made up of half of the eighth grade class at Helena's Hawthorne School.

Proper sighting and positions are practiced by (left to right): Jim Ricker, Larry Ashcroft, Rich O'Connell and Dave Clark under the supervision of Bob Schmidt (far right), Helena Wildlife Association, and Frank Dunkle (far left), Montana Fish and Game Department



Larry Heller, Jim Hanson and Don Mischel demonstrate the proper method of removing guns from a car. Shooting safety instructors emphasized the importance of carrying only unloaded guns in automobiles.

Shooting Safety

Sponsored by

THE HELENA WILDLIFE ASSOCIATION

With the mounting number of hunting accidents, the Helena Wildlife Association believes that shooting safety classes given by qualified instructors is part of the answer in helping to reduce hunting accidents.

Many accidents result from hunters attempting to cross fences improperly. Mike South (left), Terry Bright and Lester Loble show the safe way to cross a fence. A safe hunter takes no chances.



The boys have successfully completed crossing the fence. They have been taught to keep their guns unloaded and always pointed in a safe direction when attempting a crossing.

When three hunters are afield together, gun safety is necessary to insure a pleasant outing. Jim Cote (left), Mike Tucker and Bob Olson demonstrate one of the accepted methods of walking for a party of hunters carrying firearms.





Dr. C. J. D. Brown gives close attention to a fisheries question.



Dr. Don Quimby lectures to warden "students" on big game management.

Exam time means intensified thinking on the fact-packed training course.



School for Wardens

Keeping pace with developments in field and laboratory research, the Fish and Game Department has inaugurated a yearly program of personnel training under the direction of the Division of Information and Education.

Montana's first major effort toward a In-Service training program was in 1954, at the Department's headquarters on the Blackfoot-Clearwater Game Range. However, problems of transportation and the lack of technical facilities made the selection of a different site necessary.

Thus, with the cooperation of Dr. C. J. D. Brown, Montana State College, a nine-day school was prepared. Specialists in every biological field from anatomy to wildlife were asked to prepare lectures and laboratory courses, and from this material a 133-page syllabus was developed.

On March 3, a class of 19 men started a strenuous 8 a.m. to 9 p.m. schedule. The training program was designed to give the wardens a general picture of fish and game management, and to prepare them for conservation education assignments, among adult and youth groups.

Subjects included: comparative anatomy, embryology, identification of amphibia, fish, reptiles, insects, birds, plants and small mammals.

The men learned how to preserve and prepare study skins, and observed animal autopsy demonstrations. Lectures included management of big game, fur bearers, upland game birds, waterfowl and fish, range carrying capacity and populations, disease and predation.

The students also studied techniques of management, the place of regulations in the management program, and had practice in public speaking and reporting.

Completion of the Department's new district supervisor headquarters building in Bozeman enabled the warden "students" to use it as a general meeting place for study and discussion, as well as utilizing the sleeping facilities.

Following the lectures and lab assignments, regular written examinations were given. Final tests and grades were released by Montana State College officials at the end of the school. The men who made passing grades in their courses were issued certificates of "Satisfactory Completion," which will be important records in their personnel files.

College personnel participated in the In-Service training program in addition to their other full-time teaching schedules. Many hours were spent by Dr. Brown, and those who

assisted him, in making this school a success. The use of State College laboratories, instruments and specimens were essential in the success of the school.

Assisting Dr. Brown were: Doctors W. E. Booth, Don C. Quimby and Harold Watling; and Professors Elbert R. Simmons, Richard Froeschner, John W. Safford and John P. Parker.

Department personnel who lectured during the course were Richard Graham, Arthur Whitney, Eldon Smith, Lloyd Casagranda, Paul Berg, Joseph Townsend, Robert Eng, Jack Bailey, Wynn Freeman, Perry Nelson and W. K. Thompson.

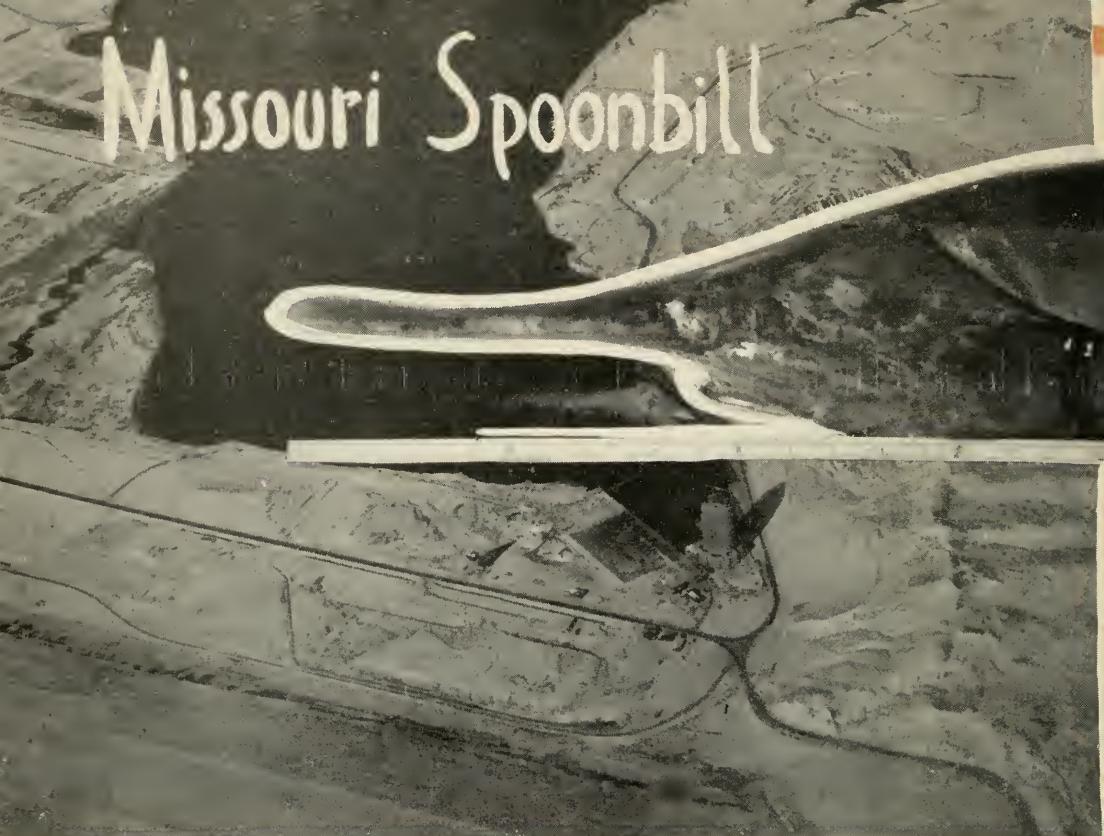
Since the science of fish and game management is progressing so rapidly, any fish and game department intent on achieving maximum results must follow a regular on-the-job instruction program for all employees.

This is the objective of the Montana Fish and Game Department.

Happy graduates of the Warden's In-Service training school at Montana State College are: (front row, left to right) Lawrence Deist, Kalispell; Wayne Fitzwater, Dillon; Otto Kebischull, Havre; Robert Donlin, Great Falls; (second row) Louis Kis, Butte; Oswald Nollar, Polson; Waldo Vangness, Lewistown; Roy Thompson, Greenough; Bert Goodman, manager, Judith River game range, Utica; (third row) George Hollibaugh, Miles City; John Cook, Glendive; Gene Tierney, Harlowton; (fourth row) Norman Wortman, fieldman, Gallatin Gateway; Henry Preshinger, Stanford; Vern Waples, Red Lodge; Ed Canoose, Columbus; (fifth row) James Rogers, Twin Bridges; Kenneth Sears, West Yellowstone, and Warren Linnville, Broadus.



Missouri Spoonbill



by

William Alvord, Fisheries Biologist

The paddlefish, or spoonbill catfish (*Polyodon spathula*), is perhaps our most remarkable freshwater fish. Its primitive, shark-like form led Walbaum, who made the original description in 1792, to mistakenly call it a species of shark. The American paddlefish is limited to the rivers of the Mississippi Valley, and its only relative in the world is a species found in the Yangtze Valley in China.

While the paddlefish may attain weights up to 163 pounds and lengths up to 6 feet, ordinary specimens usually range from 30 to 50 pounds in weight. Color of the paddlefish may vary from a pale gray to a dusky-bluish olive.

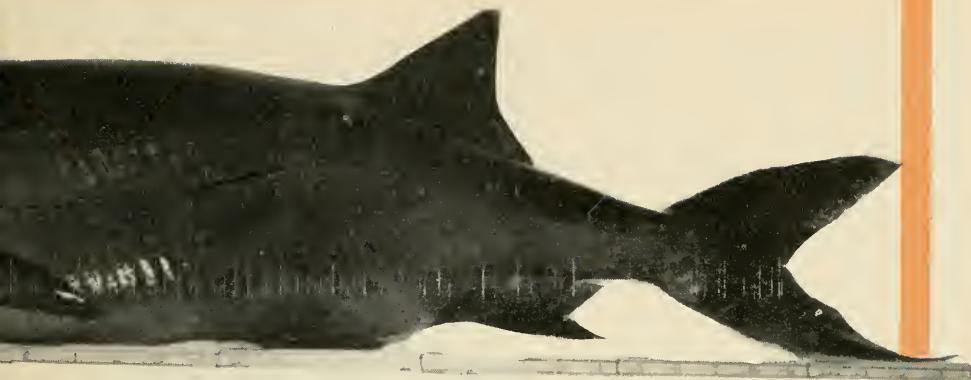
The large, paddle-shaped snout of the paddlefish may be described as an expanded sense organ. In fact, the paddle, the top and sides of the head, and the long, pointed operculum flaps are all well-covered with sensory pits which give these areas somewhat the appearance of pigskin-grained leather.

Contrary to popular belief, the paddle is not used in rooting or digging up bottom organisms for food. This observation is borne out by the absence of mud in the intestines of collected specimens and by observations of the feeding habits of live specimens in large aquarium tanks.

The paddlefish, despite its large size, feeds on the semi-microscopic animals and plants which make up the plankton. It is, for all purposes, a living plankton net. The gill arches carry long, fine gill-rakers, which are capable of sorting out the plankton from the water as the fish swims about with its large mouth open.

Very little is known of the breeding habits of the paddlefish. From specimens examined, spawning time is thought to be in the spring, probably in May. To date, however, their spawning beds have not been located, nor have any of the young paddlefish been found. The fish matures at lengths from 39 to 50 inches, and this fact may account, in part, for the decline in paddlefish numbers. They were important commercially for several decades around the turn of the century, but as the catch fell off, the smaller sizes of fish were taken, limiting greatly the reproduction of this unique fish.

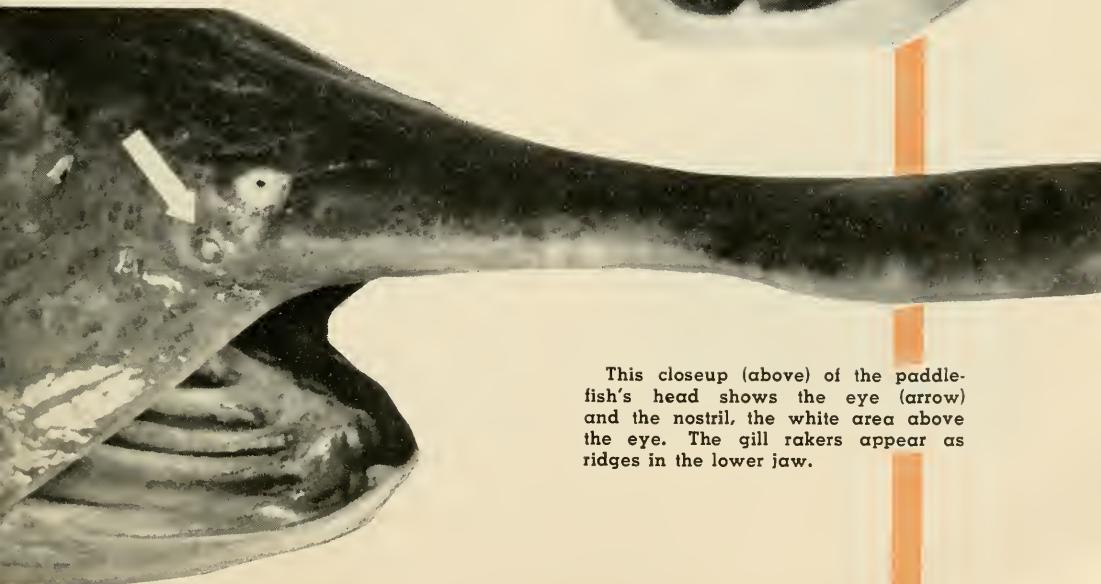
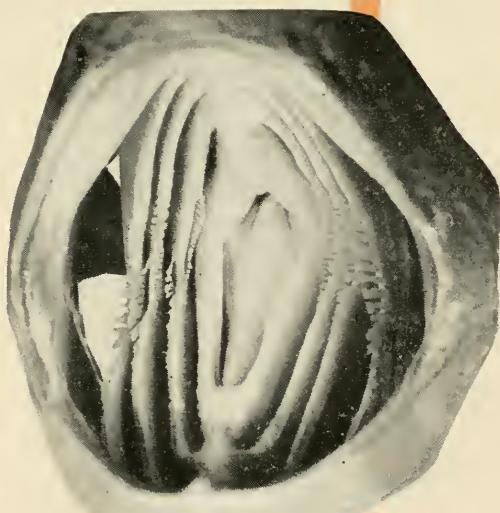
In Montana, the paddlefish is found in the Missouri River basin. Large numbers have been observed in the upper waters of the Fort Peck Reservoir, especially in that area near the mouth of the Musselshell River. They are also found in the dredge cuts below Fort Peck Dam.



The paddlefish pictured above was caught in a two-inch mesh gill net in the dredge cuts below Fort Peck by William Alvord, Fish and Game Department fisheries biologist.

This specimen weighed $43\frac{1}{2}$ pounds, was 57 inches long and measured $27\frac{1}{2}$ inches around the middle.

Gill rakers inside the mouth are clearly visible (right). These organs act as a strainer for the plankton and microscopic water organisms used as food by the paddlefish. The open area to the left is the gill slit, and the gill cover (operculum) can be seen through the opening.



This closeup (above) of the paddlefish's head shows the eye (arrow) and the nostril, the white area above the eye. The gill rakers appear as ridges in the lower jaw.

WINGS FOR GROUSE MANAGEMENT

by

Robert Eng, Game Biologist

The age and sex ratios, vital statistics in game animal populations and harvested game, are equally as important to the game manager as records of new births are to the census taker.

This information is obtained by employing many techniques developed by game biologists, including aerial counts and checking stations for big game animals, and checking stations, crowing and brood counts for upland game birds.

Brood and production studies of many upland game birds and waterfowl provide seasonal information regarding the age and sex ratios present in a given population. The hunting season provides an opportunity for a large sample of game animals to be examined with a minimum of manpower through the operation of checking stations and hunter bag checks.

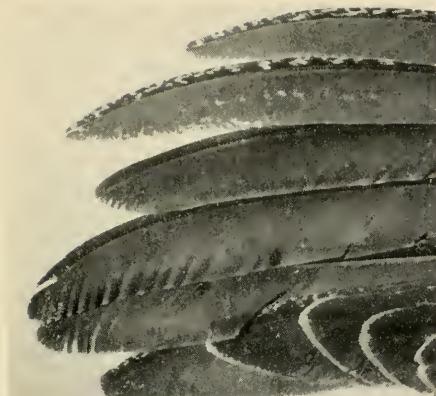
Sage grouse, largest of the native grouse, and an exclusively "western" game bird, have been hunted through limited seasons in Montana for the past three years.

During the 1952 season, little information was obtained pertaining to the sex and age composition of the harvested birds due to the lack of a rapid and accurate method for obtaining this information other than by experts very familiar with the species.

However, by internal examination of a sample of birds, a collection of wings from birds of known age and/or sex was obtained. From this sample, game bird biologists of the Wildlife Restoration Division developed a rapid and statistically sound method for obtaining the needed information from one wing. Using this technique, wings can be collected by less experienced personnel in the field and sent in for examination, thereby increasing the sample volume and the value of the information.

Briefly, this technique is based on the fact that throughout the summer and early fall, the birds go through an orderly molt of their primaries, or flight feathers, beginning on the inside and progressing toward the outer end.

The adults molt all ten of these feathers, while the young birds of the year retain the last two on the end of the wing. These two feathers display the pointed character of juvenile primaries and usually show considerable wear, in contrast to the more rounded and smooth first two primaries of the adult. Also, any molting stage of these first two primaries would usually indicate an adult. This same procedure is characteristic of sharp-tailed and mountain grouse found in Montana.



Juvenile female sage grouse wings, showing worn tips of unmolted primary wing feathers.

The size of the two sexes of adult sage grouse is very distinctive, the male being approximately twice the weight of the female. This size distinction is of a measurable difference in wing feathers of juvenile birds, before the general body size is too noticeable. The sex of the bird can therefore be determined by the length of one or two "key" primaries, the use of which is probably dependent upon the stage of molt.

The application of age and sex ratios in game management are varied. Field observations and trapping records show the sex ratios in a population of sage grouse to be approximately one male to one female, particularly in juvenile birds, before distinct habits could induce any possible differential mortality.

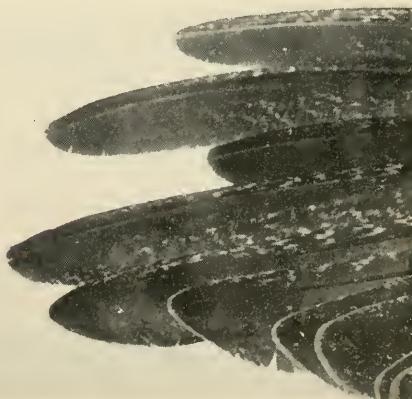
The 1953 sage grouse season was set back to October because of possible fire hazard on the dry range. Checking station records for that year show approximately twice as many juvenile hens were harvested as were juvenile cocks, plus what

appeared to be a large number of adult hens, when compared with the production figures obtained that spring. Statements from hunters relative to their having bagged "small, young birds" were common.

The majority of the juvenile males at this date exceeded even the adult females in size. It appeared that a sufficient number of hunters were shooting small birds in an attempt to get young birds, and in reality, were causing an undesirable harvest of females.

In an effort to correct this type of harvest, the 1954 season was opened, based on growth curves of juvenile birds, at a time when juveniles and adult hens were more nearly the same size. The sex ratios obtained from the hunter bag check for that year showed almost a one to one ratio for juvenile birds, and a more normal harvest of adult hens when compared to the summer production data. Whether or not this situation was actually corrected by

Adult female sage grouse wings, with rounded, unworn tips of unmolted primary wingtip feathers.



hunting season manipulation will be more definitely established by continued work along these lines. However, the application of this information and its importance to proper management of a species is amply expressed.

Production studies in key areas each year provide the biologists with information regarding the hatching success for that season, which in turn, is applied in making season recommendations. The peak of the hatch usually occurs in early June in a large part of the sage grouse range in Montana, with a few broods coming off as late as mid-July.

By August, some of the early broods begin grouping together and become difficult to distinguish as broods. With this limitation, along with being restricted to certain hours of the day, many areas are not covered with respect to collecting production data. Thus, the information obtained on age ratios, or the num-

ber of juvenile birds per adult hen in the hunter's bag, provides additional data on the hatching success for a larger area than can be covered during the summer.

Barring extreme adverse winter conditions, the status of the spring breeding population will generally be reflected by the condition of the age ratios obtained in the fall.

Continued population studies will provide clues to the relationship between favorable and unfavorable production years and the environmental factors having influence on them. Age and sex ratios become an intricate part of this type of study.

All Montana sportsmen can help in these studies if they continue to stop at game checking stations set up during the hunting season. The useable samples of information and the resulting management tools will greatly facilitate biologists working to provide Montana with the best in upland game bird hunting.



Young Outdoor American - 1955

by

James R. Hill, Nashua

My activities in conservation began five years ago when I joined the Boy Scouts. After I became a senior patrol leader, I helped train the young Scouts in first aid (human conservation) and in outdoor manners, affecting wildlife, soil and water resources.

One winter, our Scout troop put out bird feeders and houses, and nesting boxes. I will always remember the satisfaction I get when boys I helped are able to instruct the new classes of tenderfoot Scouts in the Scouting program.

I became a member of the Nashua chapter of Future Farmers of America during my first year in high school, and I joined the newly-organized Lucky Clover 4-H club the following summer. My 4-H activities were planning and planting a 1,200 tree shelterbelt, and planting and caring for a grass nursery.

I am now a junior 4-H leader, and help the younger members to care for the shelterbelt and records.

My Future Farmer project was a 120-acre tract of land, given by my Dad to my brother, Jack, and me. I signed an agreement with the local Soil Conservation District, after con-



JAMES R. HILL

sulting with a friend, Mack Sholtus, who has been a lot of help to me.

Jack and I started to improve the land by following good conservation practices—stubble mulching, grassing waterways and using strip cropping. We have all but one gully under control now, and the waterways looked fine this spring.

The progress of my FFA work, scouting activities and the shelterbelt project went into my scrapbook for the Young Outdoor American contest. The Valley Sportsmen's Association of Glasgow sponsored me, and I won first places in the Valley county and district contests.

To aid other Montana teen agers, James Hill, Montana's 1955 representative at the Isaac Walton League's Young Outdoor American meeting in Chicago, tells of his work in 4-H, FFA and Scouting.

Jim's experiences may give inspiration to other conservation-minded teen agers, who might otherwise believe their projects and hobbies not elaborate enough to enter in the 1956 Young Montana Conservationist contest.

I count it a privilege that I was chosen to attend the Helena meeting of Montana's young conservationists. This was educational for me because I learned what other delegates had been doing, and we talked over problems of conservation in various parts of the state. I was especially interested in the talk "The Book and The Land" given by Mrs. Ray West, Anaconda.

At the three-day meeting in Chicago, four conservation topics—"Too Little Water," "Too Much Water," "Unclean Water" and "The Small Watershed"—were discussed by the delegates, who exchanged ideas and information. The group seemed to be split on the problem of big dams—which cover many acres of wildlife land—and no dams at all. We did agree on the value of the small watershed. A watershed includes the land, the animals and plants, and the people living within its boundaries.

Ten teen-age delegates participating in Montana's Young Outdoor American program met in Helena March 12. These boys and girls, representing youth organizations all over the state, were selected for their outstanding work in conservation activities, and were sponsored by the Montana Wildlife Federation and cooperating sportsmen's clubs.

Governor J. Hugo Aronson and A. A. O'Clair, director of the Montana Fish and Game Department, addressed the group. Larry Wilson, Kalispell, the 1954 delegate to YOA in Chicago, was meeting chairman.

On the basis of leadership, accomplishment and ability to present his material, the teen agers voted Jim Hill as their representative to the Izaac Walton League's national meeting of Young Outdoor Americans in Chicago.

Montana's teen age conservationists, meeting in the Senate Chambers at the State Capitol are (front row): Jean Shields, Roundup; Patsy Paugh, McAllister; Arlene Walby, Glasgow; (back row) Verle Lanier, Billings; Duane Sargent, Simpson; John Nickey, Bozeman; Phillip Cook, Creston; Edward Tilzey, Missoula; James Hill, Nashua, and Tommy Thompson, Wolf Creek.

The delegates passed a resolution proposing that the Izaac Walton League ask Walt Disney to make a film on conservation, which would be educational, entertaining and have a large audience.

Before the meeting was over, most of the delegates took guided tours around Chicago, through the Museum of Science and Industry and around the "Loop" to see the Board of Trade building, the Wrigley building, the Merchandise Mart and other points of interest.

My experiences in Chicago will stay with me wherever I go, and I will long remember the things I learned from the new friends I met.

My thanks go to those who helped and inspired me to work for these opportunities, my Mom and Dad; Robert Pust, my Vo-Ag teacher; Mack Sholtus, Dana Schrupp, our county agent, and all the other folks and organizations who make these experiences possible for the youth of today, the leaders of tomorrow.



EDITORIAL:

TAKE A KID FISHING

Somewhere in your neighborhood, there is a lonesome little youngster who has never had a chance to go fishing. Maybe the parents aren't interested in the out-of-doors; maybe there are no parents, or no dad.

Everyone agrees that outdoor living builds character and makes good citizens, but few people actually go out of their way to help develop these citizens of the future.

Courts and criminal judges all over the land report they have never had a juvenile delinquent who had been a fisherman. This should be challenge enough for any fisherman to take a kid fishing.

But it is more than that. Just try sharing a day with a youngster who hasn't had a chance to wade a stream, cast a fly or dunk an angle-worm. The wide-eyed enjoyment will be sufficient reward, and your contribution to a better state and nation will equal your own satisfaction.

All sportsmen's clubs could make a real drive to give every boy and girl in Montana a chance to fish. More than 185,000 residents purchased fishing licenses last year. If each license holder would take a kid fishing just once, most youngsters would have an opportunity to appreciate and enjoy the out-of-doors. (You don't even need to buy a license for those under fifteen.)

It's easy to talk about these things, but why not do something? Dig up that old fishing equipment and find a boy or girl who has not had a chance to enjoy Montana's fishing. Take just one day of your time, and we believe you will agree it is the best investment in the future you can make.



Snow geese over Freezeout Lake during the fall migration.

A Marshland in the Making

With the coming of fall, thousands of snow geese move in long, wavy lines down over the prairies and wheatlands of Alberta. On reaching Montana they converge and in a tumult of sound, circle to a landing on Freezeout Lake in Teton county.

Here they rest and feed, preparing to continue the long flight between their arctic breeding grounds and the fertile valleys of California where they winter.

For a number of years it has been possible to see as many as 15,000 snow geese on Freezeout Lake in the

fall, in company with up to 80,000 ducks. However, even in the face of this picture of waterfowl abundance, conditions on Freezeout Lake have been far from ideal.

This large water surface of well over 6,000 acres has been created by run-off from the irrigation system on nearby Fairfield Bench. The lake has had no outlet so there has been no way to control its level. During years of heavy run-off, adjoining crop and grazing lands have been flooded. This flooding has extended to a highway and railroad nearby.

With no outlet, the water has become increasingly alkaline, and live-stock feeding to the edge and even out into the water prevented the development of nesting cover. The continuous fluctuating water level prevented the development of true marshland, and public access for hunting was becoming increasingly difficult.

Its strategic position on the important Central Waterfowl Flyway system guarantees that an abundance of ducks and geese will pass through the area. If conditions to encourage their nesting, resting and feeding could be improved, this area might well represent one of the finest waterfowl marshlands in the West. This was the objective of the Montana Fish and Game Commission when they undertook the Freezeout Lake development program two years ago.

First, a canal had to be constructed connecting the lake with the Teton River, eight miles away. This major segment of the development job has just been completed. Water is now flowing between the lake and the river, guaranteeing for the first time, control of the water level.



This 1½-ton dragline was used in the construction of the main drainage canal at Freezeout Lake (right). Below, an aerial view of the project, looking southeast toward Freezeout Lake, with Eastham Junction in the foreground. The canal, cutting through the center of the picture, extends eight miles through Priest Lake to the Teton River.



Lands about the edge of the lake have been acquired, thus insuring public access by hunters for the future years.

This State-owned land also makes it possible to develop a cropping pattern by which a buffer strip of grain will be provided about the edge of the lake, furnishing food for the waterfowl and lessening their use of surrounding private fields. Livestock grazing about the lake edge can now be carefully controlled so that nesting and feeding cover may be developed.

The construction of dikes to control water levels in several large ponding areas associated with the lake will represent major segments of

this over-all program of a marshland in the making.

It may be several years before this program is fully appreciated. We need only look about us, however, to see how rapidly public access to choice hunting sites is disappearing. Private gun clubs, "no hunting" signs, and marshland drainage are all operating to the detriment of the average hunter.

Freezout Lake, when completed, should add materially to the local production of ducks and geese. It should also encourage more migrants from the north to linger in the area during the fall. These features, coupled with public access, spell out a very important forward step in Montana's waterfowl program.

Young Canada geese, a portion of the birds introduced in the Freezout development in an attempt to establish a nesting flock to encourage the production of geese in the area.





1955 Trout Bag Limits

by

Walter M. Allen, Superintendent of Fisheries

When Montana's trout fishery was evaluated recently, a change in the bag, or possession limit, for trout was prompted by information contained in creel census reports submitted by fishermen.

Many years ago, cutthroat and grayling were the predominant game fish species in Montana. Now, as the cutthroat is slowly disappearing throughout the west, every effort is being made to conserve this fish in Montana.

As a conservation measure, the cutthroat bag limit was reduced from 15 to 10 fish. The Fisheries Division felt that cutting the entire bag limit on the cutthroat would not improve its precarious position.

In examining the results of the creel census compiled by the Fisheries Division, it was determined

that the main harvest, or predominant catch, was rainbow trout. This species is termed "the management fish" in Montana's hatchery program since it is the one most used for planting. Hatchery-raised trout, reared to legal size, are expensive to sportsmen, and many creel reports revealed that bag limits for these fish should be reduced.

Further evaluation of the fishery and the catch showed that fishermen in Montana do not land many brown trout. Considerable skill is needed to hook this species, but rainbow and cutthroat trout are more vulnerable to the fisherman. In order to more extensively harvest brown trout, which are well-distributed over the state, fishermen may now take 15 of this species.

Prolific eastern brook trout have been extensively introduced in Montana's trout water, and have reproduced in such abundance that they are over-populated in some areas. Even when mature, brook trout in overpopulated waters rarely reach eight inches in length.

The 1955 restrictions on brook trout catches have been removed entirely in some areas; in other areas, the 15 fish limit remains in effect.

The Montana Fish and Game Commission is endeavoring to spread the harvest of trout in an effort to better utilize eastern brook and brown trout.

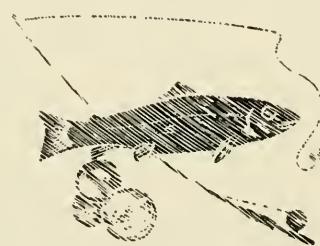
Under the 1955 fishing regulations, a fisherman may legally possess 15 brook trout as a bag and possession limit, or 10 brook trout and five brown trout. He may also legally take either 10 cutthroat trout plus five brook trout, or eight rainbow and seven brook trout, just so the aggregate bag does not contain more than a total of 10 rainbow or 10 cutthroat trout.

Any combination of trout shall not contain more than 10 pounds and one fish by weight (the weight to be computed dressed, with head and tails intact).

In areas where the Fisheries Division felt it necessary to deviate from the above-mentioned bag limits, complete regulations may be found under "county" listings in the fishing regulations.

The Montana Fish and Game Commission is now seriously considering a proposed change in the printing of the fishing regulations. Regulations would be formulated to correspond to the major drainages in the state rather than by individual counties. County lines are often difficult to find unless established by permanent markers.

By making stream drainages which are familiar to most fishermen, the boundaries for fishing regulations, the regulations could be made more simple, compact and readily understandable to all the fishing public.



What's The DIFFERENCE



Cutthroat Trout - Salmo clarki

(Other names used in Montana: Blackspotted trout, native trout, flat trout, blueback trout, Yellowstone cutthroat trout.)

Distinguishing characteristics: Bright red slash on inner edge of lower jaw; black spots usually not distributed evenly, tending to be more numerous toward the tail. Less than 13 principal rays in anal fin.

This trout is native to Montana and is found in headwater streams and lakes on both sides of the Continental Divide. Cutthroat trout have become greatly depleted in numbers over most of their natural range due to competition with other species, habitat destruction and susceptibility to fishing. Spawning takes place in clean gravel in cold mountain streams in the spring. Food consists of aquatic insects, crustaceans, snails and plankton.

Rainbow Trout - Salmo gairdneri

(Other names used in Montana: Mountain trout, steelhead.)

Distinguishing Characteristics: Has no bright red slash on inner edge of lower jaw. Body, head and fins with numerous small, irregular black spots; no red spots. Usually a broad orange or red band running laterally in the body, the "rainbow." In some waters, particularly deep lakes, the sides may become silvery. Less than 13 principal rays in the anal fin.

The rainbow is native to the Pacific coast, but was introduced into Montana and now is found in most coldwater lakes and streams of the state. The rainbow trout is a game fighter and is the acrobat of the trout family. Spawning takes place in the spring. Food consists mainly of aquatic insects, crustaceans, snails and plankton. Rainbows will cross with cutthroat when found in the same areas, and the offspring show characteristic of both species.

JACK KOHLER
DISTRICT WARDEN SUPV.
BOX 847
BILLINGS, MONT.

Helena, Montana
Sec. 34.66, P. L. & R.
U. S. POSTAGE
PAID
Permit No. 50

16

